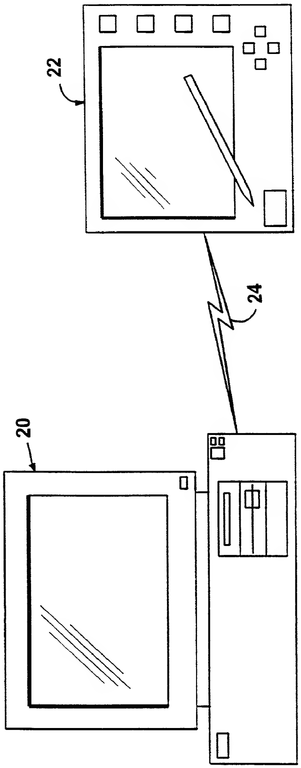


FIG. 1

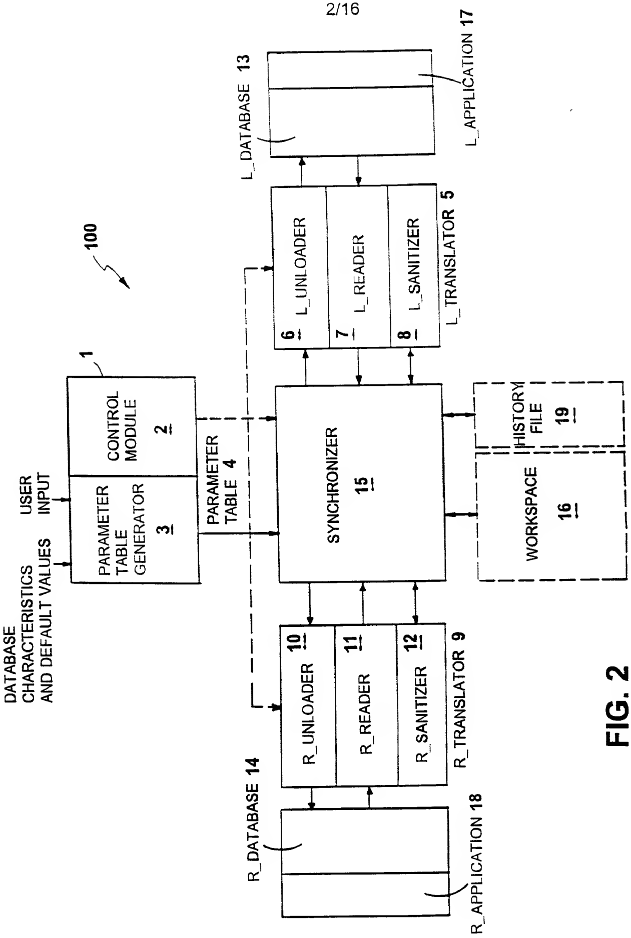

100
1
CONTROL MODULE 2
PARAMETER TABLE GENERATOR 3
USER INPUT
DATABASE CHARACTERISTICS AND DEFAULT VALUES
PARAMETER TABLE 4
SYNCHRONIZER 15
WORKSPACE 16
HISTORY FILE 19
L_DATABASE 13
L_APPLICATION 17
6 L_UNLOADER
7 L_READER
8 L_SANITIZER
L_TRANSLATOR 5
R_DATABASE 14
R_APPLICATION 18
10 R_UNLOADER
11 R_READER
12 R_SANITIZER
R_TRANSLATOR 9

FIG. 2

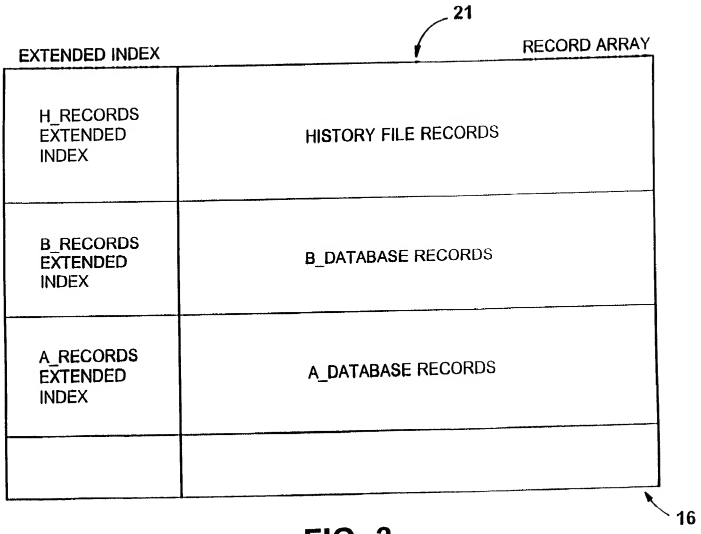

21
EXTENDED INDEX
RECORD ARRAY
H_RECORDS EXTENDED INDEX
HISTORY FILE RECORDS
B_RECORDS EXTENDED INDEX
B_DATABASE RECORDS
A_RECORDS EXTENDED INDEX
A_DATABASE RECORDS
16

FIG. 3

Pseudo Code for Translation Engine Control Module

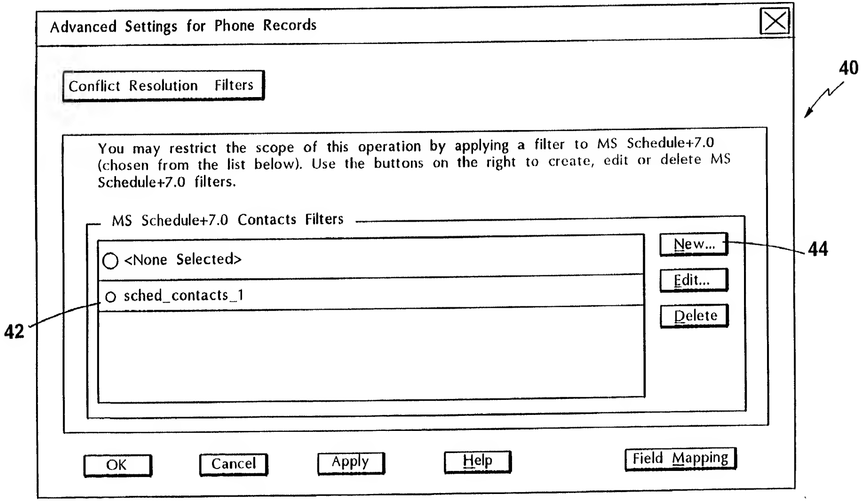
```
100.  INSTRUCT parameter table generator to create parameter table and initialize filter
101.  INSTRUCT Synchronizer to initialize itself
102.  INSTRUCT Synchronizer to LOAD the History_File into its WORKSPACE
103.  INSTRUCT R_Translator to LOAD R_records from R_Database
104.  INSTRUCT L_Translator to SANITIZE R_records that were just LOADED
105.  INSTRUCT L_Translator to LOAD L_Records from L_Database and SEND to Synchronizer
106.  INSTRUCT R_Translator to SANITIZE L_Records that were just LOADED.
107.  INSTRUCT Synchronizer to do CAAR (Conflict Analysis And Resolution) on all the records in
      WORKSPACE.
108.  INFORM user exactly what steps Synchronizer proposes to take (i.e. Adding, Changing, and Deleting
      records).  WAIT for User.
109.  IF User inputs NO, then ABORT.
110.  INSTRUCT R_Translator to UNLOAD all applicable records to R_Database.
111.  INSTRUCT L_Translator to UNLOAD all applicable records to L_Database.
112.  INSTRUCT Synchronizer to CREATE a new History File.
```

FIG. 4

Pseudocode for Generating Parameter Table

```
{Get Input from the user}
ASK user to select whether to use a filter expression
IF the user selected to use a filter THEN
          IF a new filter to be used THEN
                    Obtain from the user filter name
                    Obtain filter expression
                    STORE the current date and time in the FILTER_CHANGED_TIMESTAMP
                    parameter
                    Assign a unique filter ID to the filter
          ELSE Obtain from the user filter name
                    retrieve the filter expression and unique filter ID
                    IF user selects to edit the filter THEN display the filter and obtain edits
          SET FILTER_ID parameter to unique filter ID code of the selected filter
          SET USE_FILTER flag
          PARSE the filter expression into a filter token array
END IF
CREATE parameter table
```

FIG. 5



Advanced Settings for Phone Records

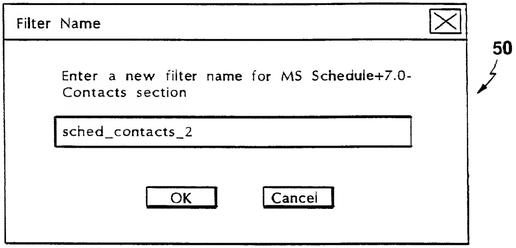
You may restrict the scope of this operation by applying a filter to MS Schedule+7.0 (chosen from the list below). Use the buttons on the right to create, edit or delete MS Schedule+7.0 filters.

MS Schedule+7.0 Contacts Filters

○ <None Selected>

○ sched_contacts_1

FIG. 6

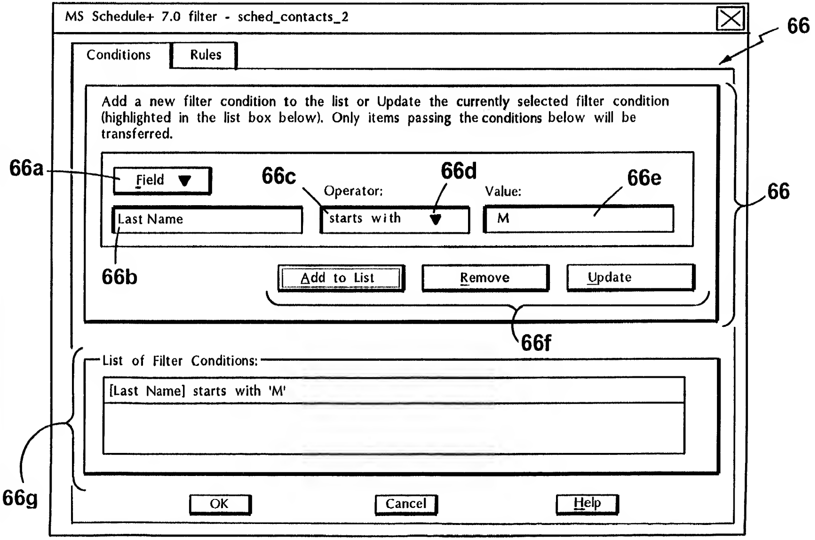


Filter Name

Enter a new filter name for MS Schedule+7.0-Contacts section

sched_contacts_2

FIG. 7



MS Schedule+ 7.0 filter - sched_contacts_2

Add a new filter condition to the list or Update the currently selected filter condition (highlighted in the list box below). Only items passing the conditions below will be transferred.

Field: Last Name

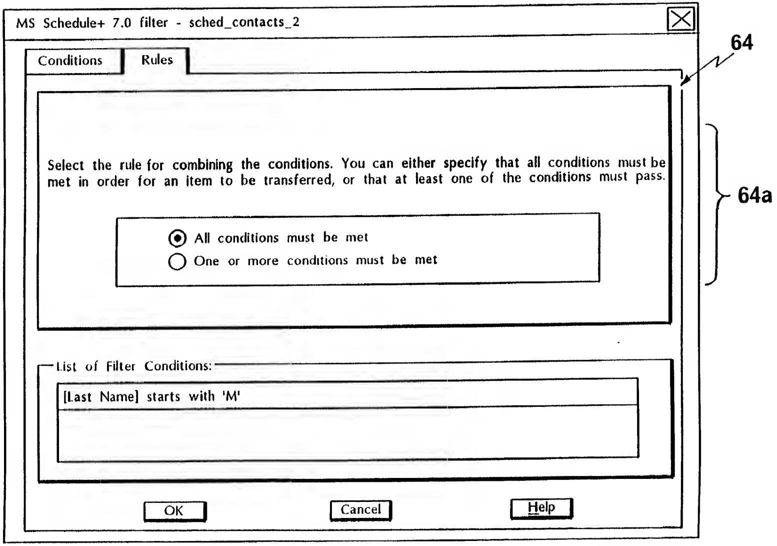
Operator: starts with

Value: M

List of Filter Conditions:

[Last Name] starts with 'M'

FIG. 8



MS Schedule+ 7.0 filter - sched_contacts_2

Select the rule for combining the conditions. You can either specify that all conditions must be met in order for an item to be transferred, or that at least one of the conditions must pass.

● All conditions must be met
○ One or more conditions must be met

List of Filter Conditions:

[Last Name] starts with 'M'

FIG. 9

Filter language specification

Expression = Condition1 [AND Condition2] ... [OR Condition3] ...

Condition = ARG1 OP ARG2

OP = OP_SET_1 ¦ OP_SET_2 ¦ OP_SET_3 ¦ OP_SET_4 ¦ OP_SET_5 ¦ OP_SET_6

OP_SET_1 = EQ ¦ LE ¦ GE ¦ NE ¦ LT ¦ GT

OP_SET_2 = OP_SET_1 TODAY - ¦ OP_SET_1 TODAY +

OP_SET_3 = OP_SET_1 NOW - ¦ OP_SET_1 NOW +

*OP_SET_4 = STARTS_WITH ¦ CONTAINS ¦ DOES_NOT_CONTAIN ¦ IS_EMPTY ¦
IS_NOT_EMPTY*

*OP_SET_5 = + ¦ - ¦ * ¦ / ¦ %*

OP_SET_6 = IS

For Dates - ARG1 OP ARG2:

[Date Fieldname]	*OP_SET_1*	*'YYYYMMDD' ¦ [Date Fieldname2] ¦ TODAY*
[Date Fieldname]	*OP_SET_2*	*integer*

For Times - ARG1 OP ARG2

[Time Fieldname]	*OP_SET_1*	*'HHMM' ¦ [Time Fieldname2] ¦ NOW*
[Time Fieldname]	*OP_SET_3*	*integer*

For TextStrings - ARG1 OP ARG2

[String Fieldname]	*OP_SET_1*	*'textstring' ¦ [String Fieldname2]*
[String Fieldname]	*OP_SET_4*	*'textstring'*

For Booleans - ARG1 OP ARG2

[Boolean Fieldname]	*OP_SET_6*	*TRUE*
[Boolean Fieldname]	*OP_SET_6*	*FALSE*

For Numbers - ARG1 OP ARG2

[Number Fieldname]	*OP_SET_1*	*integer ¦ float*
[Number Fieldname]	*OP_SET_5*	*integer ¦ float*

FIG. 10

```
200.  FOR each Record in history file
201.        Load record
202.        Write record to Workspace
203.  Next
```

FIG. 11

```
300.  IF Use_Filter = TRUE and R_Application_Is_Filtering = FALSE THEN
301.      FOR each Record in the remote database
302.          Load record
303.          Filter the loaded record
304.          IF record passes the filter THEN mark as PASSED_FILTER
305.          ELSE mark as FAILED_FILTER
306.          Send record to synchronizer
307.          In Synchronizer: Write record to Workspace
308.      Next
309.  ELSE IF Use_Filter = TRUE and R_Application_Is_Filtering = TRUE THEN
310.      Send the filter expression to R_Application
311.      Load filtered records
312.      IF the record passes current filter THEN Mark as PASSED_FILTER ELSE Mark as
          FAILED_FILTER
313.      Send records to synchronizer
314.      In Synchronizer: Write records to Workspace
315.  END IF
```

FIG. 12

```
350.  Form all records in the workspace into CIGs
351.  For each CIG
352.          Compare the records in CIG
353.          Determine synchronization outcome
354.          IF a synchronization outcome is a conflict THEN
355.          IF one of the database records in the CIG does not pass the current filter, THEN skip CIG and
              mark results as DO NOT UPDATE any of the records
356.                  ELSE resolve conflict by reference to a user-selected rule or input from the user
357.          END IF
358.          IF the most up to date record fails the filter, THEN mark all records as having failed the
              current filter
359.          IF the filter expressions contains an unmapped field and one of the database records in the CIG
              are marked as having failed the filter, THEN mark all records as having failed the filter
360.          IF a fanned out recurring record is partially outside of the current filter, THEN mark the
              record to be fanned when being unloaded and delete previous fanned nonrecurring records
361.  Next
```

FIG. 13

```
400.  FOR each remote database record
401.      IF Use_Filter = TRUE and the filter is a static filter THEN
402.          IF record is marked as FAILED_FILTER THEN
403.              Delete record on the remote database
404.          Else IF the record is marked as PASSED_FILTER THEN add, delete, or modify
              record according to results of synchronization obtained during CAAR analysis
405.      ELSE IF Use_Filter = TRUE and the filter is a dynamic filter THEN
406.          IF record fails the current filter THEN
407.              Delete record on the remote database
408.          Else IF the record passes the current filter THEN add, delete, or modify record
              according to results of synchronization obtained during CAAR analysis
409.      END IF
410.  Next
```

FIG. 14

```
450. FOR each local  database record
451.     IF Use_Filter = TRUE and the filter is a static filter THEN
452.         IF record is marked as FAILED_FILTER THEN
453.             IF CAAR outcome is to modify the record then modify the record on the
                 local database
454.         Else IF the record is marked as PASSED_FILTER THEN add, delete, or modify
             record according to results of synchronization obtained during CAAR analysis
455.     ELSE IF Use_Filter = TRUE and the filter is a dynamic filter THEN
456.         IF record fails the current filter but marked as PASSED_FILTER THEN
457.             IF CAAR outcome is to modify the record then modify the record on the
                 local database
458.         Else IF the record passes the current filter THEN add, delete, or modify record
             according to results of synchronization obtained during CAAR analysis
459.     END IF
460. Next
```

FIG. 15

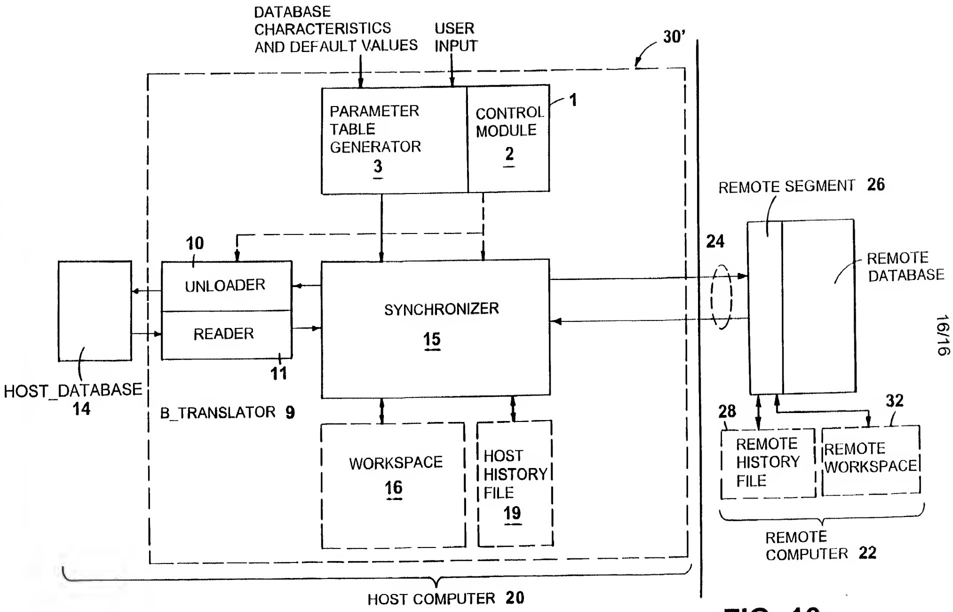

DATABASE CHARACTERISTICS AND DEFAULT VALUES
USER INPUT
30'
PARAMETER TABLE GENERATOR 3
CONTROL MODULE 2
1
REMOTE SEGMENT 26
24
REMOTE DATABASE
10
UNLOADER
READER
11
SYNCHRONIZER 15
HOST_DATABASE 14
B_TRANSLATOR 9
WORKSPACE 16
HOST HISTORY FILE 19
28
32
REMOTE HISTORY FILE
REMOTE WORKSPACE
REMOTE COMPUTER 22
HOST COMPUTER 20

FIG. 16